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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,549

03/17/2006

Daisuke Kanenari

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03/23/2009

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1791

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/572,549	<b>Applicant(s)</b> KANENARI, DAISUKE	
	<b>Examiner</b> Justin R. Fischer	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 7-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimura (US 2002/0033557, of record) and further in view of Dollinger (WO92/20538, of record), Ohtsuka (JP 2000-290629, of record), and Asahara (US 5532319, of record).

Hashimura is directed to a tire laminate comprised of (a) an innerliner formed of a thermoplastic elastomer and (ii) an adhesive composition having a thickness between 1 and 100 microns (Paragraph 34). In describing the adhesive composition, Hashimura gives a plurality of examples and suggests that the adhesive is not particularly limited (Paragraphs 34 and 35). While applicant fails to expressly disclose the use of a thermoplastic elastomer as the adhesive, such a material represents a well known adhesive material that has been previously used to adhere innerliners to additional rubber layers, as shown for example by Dollinger (Page 8, Lines 9-18). It is emphasized that Hashimura specifically states that the adhesive material is not critical and in view of Dollinger, thermoplastic elastomers are recognized as being suitable adhesive materials when bonding innerliners to additional rubber layers. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of

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the invention would have found it obvious to form the adhesive material of Hashimura as a thermoplastic elastomer.

As to the tackiness of the adhesive composition, Hashimura suggests that a high tackiness is desired but not so high as to complicate the handling of the assembly (Paragraph 4). One of ordinary skill in the art at the time of the invention would have recognized such language as including adhesive compositions having a tack to a diene rubber of at least 5 N, it being noted that applicant describes a similar rationale in selecting an adhesive that is not overly tacky. Additionally, the adhesive composition of Hashimura, in view of Dollinger, Ohtsuka, and Asahara, is substantially the same as that of the claimed invention- one of ordinary skill in the art at the time of the invention would have expected said adhesive to have similar self tack properties, as compared to the adhesive of the claimed invention. In this regard, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed properties. It is noted that the examples in Table 1 are not persuasive since multiple parameters are varied between respective examples (e.g. components and amounts) and it is unclear if the realized benefits are a result of any single material/amount or a combination of materials/amounts.

In regards to the adhesive composition, it is noted that Hashimura does suggest rubber compositions that are modified with epoxy groups (Paragraph 35). Being that a thermoplastic elastomer is a blend of a thermoplastic resin and a rubber component, one of ordinary skill in the art at the time of the invention would have found it obvious to use such a modified rubber in a thermoplastic elastomer. While the reference fails to

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expressly disclose the oxirane oxygen content, the claimed range is consistent with epoxy modified copolymers used in adhesive compositions, as shown for example by Ohtsuka (Abstract)- one of ordinary skill in the art at the time of the invention would have found it obvious to form the epoxy modified copolymer with an oxirane oxygen content between 1 and 3 percent by weight.

Furthermore, Hashimura teaches the inclusion of a tackifier, such as a terpene resin and an aromatically modified terpene resin, in said adhesive composition (Paragraph 40). While the reference fails to expressly disclose the molecular weight and the softening point, the broad ranges of the claimed invention are consistent with these terpene resins used in adhesive compositions, as shown for example by Asahara (Column 8, Lines 41-45). It is emphasized that Hashimura suggests the use of both terpene resins and a fair reading of the reference includes compositions in which both resins are included as it is well recognized in the tire industry that such disclosures are directed to "at least one" additive. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include terpene resins in accordance to the claimed invention (including claimed loading relationship as Table 1 fails to provide a conclusive showing of unexpected results).

It is additionally noted that the adhesive composition of Hashimura can include an organic peroxide (Paragraph 36). One of ordinary skill in the art at the time of the invention would have expected the peroxide of Hashimura to have a half life

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temperature in accordance to the claimed invention since it is identical to that disclosed by the claimed invention (e.g. 2,5 dimethyl-2,5-di(t-butylperoxy)hexane).

Lastly, with respect to the independent claim, the use of stearic acid, oleic acid, or metal salts (internal mold release agents) in tire compositions, including adhesives, is extremely well known and conventional to provide a high degree of adhesion. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include any of the above noted mold release agents. It is further noted that the rationale for including such a well known additive does not have to be the same as that disclosed by applicant.

Regarding claims 3 and 9, the thermoplastic resin of the innerliner can be a polyamide (Paragraph 17).

As to claims 4 and 10-12, Hashimura suggests the use of brominated isobutylene-p-methylstyrene (Paragraph 20).

With respect to claims 5, 13, and 14, Hashimura suggests the use of dipentene resins or other terpene resins (Paragraph 40).

As to claims 7 and 15-19, Hashimura suggests the use of 2,5 dimethyl-2,5-di(t-butylperoxy)hexane (Paragraph 36).

Regarding claim 21, Hashimura suggests the inclusion of an aromatic hydrocarbon modified terpene resin, such as a dipentene resin. In such an instance, vinyl moieties represent one of the most conventionally used hydrocarbon groups when forming modified polymers. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use

a vinyl moiety to form the hydrocarbon modification disclosed by Hashimura. Lastly, if the aromatically modified terpene resin functions as the terpene resin (disclosed as component A), then the claims describe embodiments in which only said resin is included as the tackifier (B can be zero).

### ***Response to Arguments***

3. Applicant's arguments filed January 22, 2009 have been fully considered but they are not persuasive.

Applicant initially points to Table 1 of the original disclosure and argues that a comparison of Example 4 with Examples 1-3 provides a showing of unexpected results. The examiner respectfully disagrees. First, multiple variables are changed between Examples 1 and 2 and Example 4 (resin loading, rubber loading, and peroxide loading) and thus, it is unclear if any realized benefits should be attributed to the claimed resin loading or the additional variables or a combination of all variables. Thus, the only fair comparison is with Example 3 (only resin loading is varied). In this instance, the inventive composition appears to demonstrate some improved properties; however, the comparison example demonstrates improved molding workability and bonding and thus, the experiments do not provide a conclusive showing of unexpected results. It is further noted that Table 1 does not compare the inventive composition with additional compositions that include both resins but have a resin loading outside of the claimed invention (such a comparison might demonstrate a conclusive showing of unexpected results for the claimed resin loading- currently, no examples include both resins and a resin loading outside of the claimed invention).

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Applicant further argues that none of the references teach the claimed combination of terpene resins having a specific molecular weight and softening point and being included at a specific loading. As detailed above, Hashimura suggests the inclusion of tackifiers (up to 100 phr), such as terpene resins and aromatically modified terpene resins. A fair reading of Hashimura suggests the general inclusion of tackifiers and one of ordinary skill in the art at the time of the invention would have recognized such a disclosure as being directed to “at least one” tackifier as such is consistent with the inclusion of a wide variety of additives, including tackifiers, in the tire industry. Additionally, as detailed in the rejection above, the claimed molecular weights and softening points are consistent with the conventional terpene resins. Lastly, it is emphasized that Table 1 fails to provide a conclusive showing of unexpected results as detailed above.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer  
/Justin R Fischer/  
Primary Examiner, Art Unit 1791  
March 16, 2009

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